

## CRF Errors Corrected by the STIC Systems Branch.

Serial Number: 09/744,100C

CRF Processing Date:

Edited by:

Verified by:

1600  
8/1/2003 Changed a file from non-ASCII to ASCII Changed the margins in cases where the sequence text was wrapped down to the next line. Edited a format error in the Current Application Data section, specifically: Edited the Current Application Data section with the actual current number. The number inputted by the applicant was  the prior application data; or  other \_\_\_\_\_. Added the mandatory heading and subheadings for "Current Application Data". Edited the "Number of Sequences" field. The applicant spelled out a number instead of using an integer. Changed the spelling of a mandatory field (the headings or subheadings), specifically: Corrected the SEQ ID NO when obviously incorrect. The sequence numbers that were edited were: Inserted or corrected a nucleic number at the end of a nucleic line. SEQ ID NO's edited: Corrected subheading placement. All responses must be on the same line as each subheading. If the applicant placed a response below the subheading, this was moved to its appropriate place. Inserted colons after headings/subheadings. Headings edited included: Deleted extra, invalid, headings used by an applicant, specifically: Deleted:  non-ASCII "garbage" at the beginning/end of files;  secretary initials/filename at end of file;  page numbers throughout text;  other invalid text, such as \_\_\_\_\_. Inserted mandatory headings, specifically: Corrected an obvious error in the response, specifically: Edited identifiers where upper case is used but lower case is required, or vice versa. Corrected an error in the Number of Sequences field, specifically: A "Hard Page Break" code was inserted by the applicant. All occurrences had to be deleted. Deleted ending stop codon in amino acid sequences and adjusted the "(A)Length:" field accordingly (error due to a PatentIn bug). Sequences corrected: \_\_\_\_\_ Other: \_\_\_\_\_

Examiner: The above corrections must be communicated to the applicant in the first Office Action. DO NOT send a copy of this form.

3/1/95

ENTERED

RECEIVED  
AUG 1 2003  
TECH CENTER 1600/2900



1600

**RAW SEQUENCE LISTING**  
**PATENT APPLICATION: US/09/744,100C**

DATE: 08/11/2003  
 TIME: 12:11:07

Input Set : A:\PTO.AMC.txt  
 Output Set: N:\CRF4\08112003\I744100C.raw

3 <110> APPLICANT: Cahoon, Rebecca  
 4 Gutteridge, Steven  
 5 Lee, Jian-Ming  
 6 McGonigle, Brian  
 7 Rafalski, Antoni  
 9 <120> TITLE OF INVENTION: Ornithine Biosynthesis Enzymes  
 11 <130> FILE REFERENCE: BB-1174  
 13 <140> CURRENT APPLICATION NUMBER: 09/744,100C  
 14 <141> CURRENT FILING DATE: 2001-01-16  
 16 <150> PRIOR APPLICATION NUMBER: PCT/US99/15931  
 17 <151> PRIOR FILING DATE: 1999-07-14  
 19 <150> PRIOR APPLICATION NUMBER: 60/093,209  
 20 <151> PRIOR FILING DATE: 1998-07-17  
 22 <160> NUMBER OF SEQ ID NOS: 12  
 24 <170> SOFTWARE: Microsoft Office 97  
 26 <210> SEQ ID NO: 1  
 27 <211> LENGTH: 1201  
 28 <212> TYPE: DNA  
 29 <213> ORGANISM: Zea mays  
 31 <400> SEQUENCE: 1  
 32 tcgagctcga gctcgagccc cagtcaccgc agccatgctc ctcacgaaac cctacctctc 60  
 33 caactcgctc cttccagtcc catccccgcc gccgtcgggc octactctca gctccaacca 120  
 34 tgcagaagcccc cttggccgccc ctacttgccg tcgcagccgc ctccgcacatc ccggcacatc 180  
 35 cacggctgctg cctgtctccctt cgtcggctgc cgctgccacc gcgtcgctga gtcgagtgg 240  
 36 cgtgctctcg gaggcgctcc cttttattca gcgttcaaaa ggcaagacgg tggtggtaaa 300  
 37 gtacggcggt gcggcgatga agtccccggg gctgcaggcg tccgtgatcc gcgtatctcg 360  
 38 gctgctctcc tgcgtcggcc tccggcccggt gcttggcac ggccggcggtc cggagattaa 420  
 39 ttccctggctg ctgcgcgtcg gcgtcgagcc gcgttccgc gacggcctcc gcgtcacgg 480  
 40 cgcgctcacc atggaggtcg tcgagatggg gctagtccggg aaggtaaca aaaaccttgt 540  
 41 ttccctcatc aacatcgccg gaggcaccgc cattggctcg tgcggcaagg acgcgcgcct 600  
 42 tatacaccgct cggccgtctc caaatgcgc ggcgtggga ttctgtcgccg aggtttcgcc 660  
 43 cgtggacgccc accgtcctcc atccccatcat cggccggccgcatatccggg ttatcgccac 720  
 44 cgttgcggcc gacgagactg ggcaagccta taacatcaat gctgatacgg cggctggcga 780  
 45 gattgcccgt gccgtggcg ccgagaagct gctgttgctc acagatgtgt ctggcatttt 840  
 46 ggcggaccgt aatgaccctg ggagcctggg gaagggtggc gacattgtcg gggtgccgaa 900  
 47 gatggtggtc gacggaaagg tagctgggtg gatgataccc aagggtggagt gttgtgttca 960  
 48 cgccttgca caaggtgtac acaccgcaag tatcattgtat gggcgtgttc cacactctct 1020  
 49 tctgcttgag attctcacag acgaggccac aggccaccatg atcactggct gagctgcttc 1080  
 50 atgccttcat ggtattttcc ttgccttctt ttctcatatt gttgtgtttt atggctatgt 1140  
 51 agactaaact caagattgca ataagactac ctaagttgg ttgaaaaaaaaaaaaaaa 1200  
 52 a 1201  
 54 <210> SEQ ID NO: 2  
 55 <211> LENGTH: 345

16

RAW SEQUENCE LISTING  
PATENT APPLICATION: US/09/744,100C

DATE: 08/11/2003  
TIME: 12:11:07

Input Set : A:\PTO.AMC.txt  
Output Set: N:\CRF4\08112003\I744100C.raw

```

56 <212> TYPE: PRT
57 <213> ORGANISM: Zea mays
59 <400> SEQUENCE: 2
60 Met Leu Leu Thr Lys Pro Tyr Leu Ser Asn Ser Leu Leu Pro Val Pro
61      1           5           10          15
63 Ser Pro Pro Pro Ser Gly Pro Thr Leu Ser Ser Asn His Ala Ser Pro
64      20          25          30
66 Leu Ala Ala Pro Thr Cys Arg Arg Ser Arg Leu Arg Ile Ser Ala Thr
67      35          40          45
69 Ser Thr Ala Ala Pro Ser Pro Ser Ser Ala Ala Ala Ala Thr Ala Ser
70      50          55          60
72 Leu Ser Arg Val Asp Val Leu Ser Glu Ala Leu Pro Phe Ile Gln Arg
73      65          70          75          80
75 Phe Lys Gly Lys Thr Val Val Val Lys Tyr Gly Gly Ala Ala Met Lys
76      85          90          95
78 Ser Pro Glu Leu Gln Ala Ser Val Ile Arg Asp Leu Val Leu Leu Ser
79      100         105         110
81 Cys Val Gly Leu Arg Pro Val Leu Val His Gly Gly Gly Pro Glu Ile
82      115         120         125
84 Asn Ser Trp Leu Leu Arg Val Gly Val Glu Pro Gln Phe Arg Asp Gly
85      130         135         140
87 Leu Arg Val Thr Asp Ala Leu Thr Met Glu Val Val Glu Met Val Leu
88      145         150         155         160
90 Val Gly Lys Val Asn Lys Asn Leu Val Ser Leu Ile Asn Ile Ala Gly
91      165         170         175
93 Gly Thr Ala Ile Gly Leu Cys Gly Lys Asp Ala Arg Leu Ile Thr Ala
94      180         185         190
96 Arg Pro Ser Pro Asn Ala Ala Leu Gly Phe Val Gly Glu Val Ser
97      195         200         205
99 Arg Val Asp Ala Thr Val Leu His Pro Ile Ile Ala Ala Gly His Ile
100     210         215         220
102 Pro Val Ile Ala Thr Val Ala Ala Asp Glu Thr Gly Gln Ala Tyr Asn
103     225         230         235         240
105 Ile Asn Ala Asp Thr Ala Ala Gly Glu Ile Ala Ala Ala Val Gly Ala
106     245         250         255
108 Glu Lys Leu Leu Leu Leu Thr Asp Val Ser Gly Ile Leu Ala Asp Arg
109     260         265         270
111 Asn Asp Pro Gly Ser Leu Val Lys Val Val Asp Ile Ala Gly Val Arg
112     275         280         285
114 Lys Met Val Ala Asp Gly Lys Val Ala Gly Gly Met Ile Pro Lys Val
115     290         295         300
117 Glu Cys Cys Val His Ala Leu Ala Gln Gly Val His Thr Ala Ser Ile
118     305         310         315         320
120 Ile Asp Gly Arg Val Pro His Ser Leu Leu Leu Glu Ile Leu Thr Asp
121     325         330         335
123 Glu Gly Thr Gly Thr Met Ile Thr Gly
124     340         345
126 <210> SEQ ID NO: 3
127 <211> LENGTH: 1186

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**RAW SEQUENCE LISTING**  
**PATENT APPLICATION: US/09/744,100C**

**DATE: 08/11/2003**  
**TIME: 12:11:07**

**Input Set : A:\PTO.AMC.txt**  
**Output Set: N:\CRF4\08112003\I744100C.raw**

128 <212> TYPE: DNA  
 129 <213> ORGANISM: Oryza sativa  
 131 <220> FEATURE:  
 132 <221> NAME/KEY: unsure  
 133 <222> LOCATION: (613)  
 134 <223> OTHER INFORMATION: n = A, C, G, or T  
 136 <400> SEQUENCE: 3  
 137 gcacgagtac agcggcccg ccggccat gctcctcgcg aagccccacc tctccctc 60  
 138 ctcttcctc ccatccacgc gggtgtctag ccccgctccg ggtcccaacc acgcaaagcc 120  
 139 catcgccgcc tctcccggcc ctcgacgtcg cctccgtctc gccgtcacat ccggccggc 180  
 140 gccggctgt tcgtcgccgg aggccggccgc ggcgtgagc cgctggatg tgctctcaga 240  
 141 ggcgtccccc ttcatccagc gcttcaaggaa gaagaccgtg gtggtaagt acggcggcgc 300  
 142 ggcgtgaag tcgcccggc tccaggcttc agtgatccgc gacctggtcc tcctctcg 360  
 143 cgtcgccctc caccgggtgc tcgtccacgg ccggggccg gagatcaact cctggctgct 420  
 144 ccgcgtcgcc gtcgagccgc agttccggaa ccggccctccgc gtcaactgacg cgctcaacat 480  
 145 ggagggtcgtc gagatgggtgc tcgtccgaa ggtcaacaaa gaactccctc ccctcatcaa 540  
 146 actcccgaaa gggagccgc taagtctcg ttgaaaggaa gtcgcctcc tcaacgagcg 600  
 W--> 147 **gcctcccg aangaaaagg gcctcggtt tgtcggccgg gtctggcgcg tggacgcccac** 660  
 148 cgtcctccac ccaatcatcg cctccggta catccggtc atcgccactg tggcgccga 720  
 149 cgagaccggg caggcctaca acatcaacgc tgacacggcg gccggcgaga tcggccggc 780  
 150 ggtcgccgcg gagaagctgt tgctgctcac agatgtgtct ggaattctgg ccgaccgtaa 840  
 151 tgaccccgaa agtctggta aagagatcga cattgctgg gtgcggcaga tggtgccga 900  
 152 cgggcaggta gctggggta tgataccgaa ggtggatgc tgcgtgcgtg ccctcgac 960  
 153 gggcgtgcac actgcaagca tcatcgatgg gcgtgtcccg cactcggtgc tgctcgagat 1020  
 154 tctcacat gagggcactg gcactatgt cactggctga ggtgattcat cccgtcg 1080  
 155 tattctccgg tgcctcttt ctcatactgt aatgttaattt gcatttgata tgcctcatga 1140  
 156 ttgcaataag aattgtattc ctcaaaaaaa aaaaaaaaaa aaaaaaa 1186  
 158 <210> SEQ ID NO: 4  
 159 <211> LENGTH: 343  
 160 <212> TYPE: PRT  
 161 <213> ORGANISM: Oryza sativa  
 163 <220> FEATURE:  
 164 <221> NAME/KEY: UNSURE  
 165 <222> LOCATION: (195)  
 166 <223> OTHER INFORMATION: Xaa = ANY AMINO ACID  
 168 <400> SEQUENCE: 4  
 169 Met Leu Ala Lys Pro His Leu Ser Ser Ser Phe Leu Pro Ser  
 170 1 5 10 15  
 172 Thr Arg Val Ser Ser Pro Ala Pro Gly Pro Asn His Ala Lys Pro Ile  
 173 20 25 30  
 175 Ala Ala Ser Pro Ala Pro Arg Arg Cys Leu Arg Leu Ala Val Thr Ser  
 176 35 40 45  
 178 Ala Ala Ala Pro Ala Ala Ser Ser Ala Glu Ala Ala Ala Leu Ser  
 179 50 55 60  
 181 Arg Val Asp Val Leu Ser Glu Ala Leu Pro Phe Ile Gln Arg Phe Lys  
 182 65 70 75 80  
 184 Gly Lys Thr Val Val Lys Tyr Gly Gly Ala Ala Met Lys Ser Pro  
 185 85 90 95  
 187 Glu Leu Gln Ala Ser Val Ile Arg Asp Leu Val Leu Ser Cys Val

**RAW SEQUENCE LISTING**  
**PATENT APPLICATION: US/09/744,100C**

**DATE: 08/11/2003**  
**TIME: 12:11:07**

**Input Set : A:\PTO.AMC.txt**  
**Output Set: N:\CRF4\08112003\I744100C.raw**

188	100	105	110
190	Gly Leu His Pro Val Leu Val His	Gly Gly Gly	Pro Glu Ile Asn Ser
191	115	120	125
193	Trp Leu Leu Arg Val Gly Val	Glu Pro Gln Phe	Arg Asn Gly Leu Arg
194	130	135	140
196	Val Thr Asp Ala Leu Asn Met	Glu Val Val	Glu Met Val Leu Val Arg
197	145	150	155
199	Lys Val Asn Lys Glu Leu Leu Ser	Leu Ile Lys Leu Pro	Gly Gly Ser
200	165	170	175
202	Ala Val Ser Leu Cys Trp Lys Glu	Ala Arg Leu Leu Asn	Glu Arg Pro
203	180	185	190
<b>W--&gt;</b>	<b>205 Ser Pro Xaa Glu Lys Gly Leu Arg Phe Val Gly Val Trp Arg Val</b>		
206	195	200	205
208	Asp Ala Thr Val Leu His Pro Ile Ile Ala Ser	Gly His Ile Pro Val	
209	210	215	220
211	Ile Ala Thr Val Gly Ala Asp Glu Thr Gly	Gln Ala Tyr Asn Ile Asn	
212	225	230	235
214	Ala Asp Thr Ala Ala Gly Glu Ile Ala Ala Val	Gly Ala Glu Lys	
215	245	250	255
217	Leu Leu Leu Leu Thr Asp Val Ser	Gly Ile Leu Ala Asp Arg Asn Asp	
218	260	265	270
220	Pro Gly Ser Leu Val Lys Glu Ile Asp Ile Ala Gly Val Arg Gln Met		
221	275	280	285
223	Val Ala Asp Gly Gln Val Ala Gly Gly Met Ile Pro	Lys Val Glu Cys	
224	290	295	300
226	Cys Val Arg Ala Leu Ala Gln Gly Val His	Thr Ala Ser Ile Ile Asp	
227	305	310	315
229	Gly Arg Val Pro His Ser Leu Leu Leu Glu Ile Leu Thr Asp Glu Gly		
230	325	330	335
232	Thr Gly Thr Met Ile Thr Gly		
233	340		
235	<210> SEQ ID NO: 5		
236	<211> LENGTH: 1204		
237	<212> TYPE: DNA		
238	<213> ORGANISM: Glycine max		
240	<400> SEQUENCE: 5		
241	gcacgagatg atggcagggtg cagccaaaac cctaaccat	ctttgccctt cttcccatt	60
242	cccaaccaaa ccccaaaaacc aactcaccac tagccacgt	tcccttcca ctgcgcctccg	120
243	ccaccgcgccc atttccgcgg tggcgaacgc ggcgcaacct	ccactcgccg ccgcccactgc	180
244	caccgagggt cagtaccgag tcgatgtgct ctcggagtgc	ctccccttca tccagaaaatt	240
245	ccgcggcaaa accatcgctcg tcaagtacgg cggcggccgc	atgaagtccc cgagactcca	300
246	ggcctccgtg atcaacgacc ttgtcctcct ctccgtcg	ggcctccgccc ccgtcctgg	360
247	ccacggcggc ggccccgaga tcaactcctg gctcggccgc	ctcaacatcc ccgcccgtctt	420
248	ccgcgacggc ctccgcgtca ccgacgcccga caccatggag	atcgcttcca tggcctcg	480
249	cggaaaagtc aacaaaaccc tagttctct aattaacaag	gcccggccca ccggcgtcg	540
250	cctctctggc atggacggcc gcctcctcac cgcccccccc	gctcccaagg ccggccgacct	600
251	cggctacgtc ggcgagggtcg cacgcgtcga tccccccgtc	ctccgcgtccc taatcgacac	660
252	cagccacatc cccgtcgtca cctccgtcgc cgccgatgaa	tccggacagc cctacaacat	720
253	caacgcccac accgtcgccg gagaattggc agcgctcg	ctcgccgaga agctgattct	780

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/744,100C

DATE: 08/11/2003

TIME: 12:11:07

Input Set : A:\PTO.AMC.txt

Output Set: N:\CRF4\08112003\I744100C.raw

254 gctgaccgat gtggcggaa ttcttgaaga tcggAACGAC cctgacAGCT tggtaagaa 840  
 255 gattgacata aaaggagtga agaaaatgtat ggaagatgga aaagttggtg gtggaatgtat 900  
 256 acctaagggtt aattgttgcg ttaggtcctt ggcgcaaggg gttattacag cgagtattat 960  
 257 tgatggtagg gttccgcatt ctttgttgcg tgagattttg actgatgaag gtgtggAAC 1020  
 258 tatgataact ggataagttt atttattttt ggtgtttggg tttttcttt tcaatcaagc 1080  
 259 cttgagttga ggttgcattt cagcacttgc tttgttagag attgggtattt gtttttaagt 1140  
 260 gcgtgtaatg tgagagatgg ttgaattgaa ttgaatgttt cagaaaaaaaaaaaaaaa 1200  
 261 aaaaa 1204  
 263 <210> SEQ ID NO: 6  
 264 <211> LENGTH: 342  
 265 <212> TYPE: PRT  
 266 <213> ORGANISM: Glycine max  
 268 <400> SEQUENCE: 6  
 269 Met Met Ala Gly Ala Ala Lys Thr Leu Thr Asn Leu Cys Pro Ser Phe  
 270 1 5 10 15  
 272 Pro Phe Pro Thr Lys Pro Gln Asn Gln Leu Thr Thr Ser His Ala Phe  
 273 20 25 30  
 275 Pro Ser Thr Arg Leu Arg His Arg Ala Ile Ser Ala Val Ala Asn Ala  
 276 35 40 45  
 278 Ala Gln Pro Pro Leu Ala Ala Ala Thr Ala Thr Glu Gly Gln Tyr Arg  
 279 50 55 60  
 281 Val Asp Val Leu Ser Glu Ser Leu Pro Phe Ile Gln Lys Phe Arg Gly  
 282 65 70 75 80  
 284 Lys Thr Ile Val Val Lys Tyr Gly Gly Ala Ala Met Lys Ser Pro Glu  
 285 85 90 95  
 287 Leu Gln Ala Ser Val Ile Asn Asp Leu Val Leu Leu Ser Cys Val Gly  
 288 100 105 110  
 290 Leu Arg Pro Val Leu Val His Gly Gly Pro Glu Ile Asn Ser Trp  
 291 115 120 125  
 293 Leu Gly Arg Leu Asn Ile Pro Ala Val Phe Arg Asp Gly Leu Arg Val  
 294 130 135 140  
 296 Thr Asp Ala Asp Thr Met Glu Ile Val Ser Met Val Leu Val Gly Lys  
 297 145 150 155 160  
 299 Val Asn Lys Thr Leu Val Ser Leu Ile Asn Lys Ala Gly Ala Thr Ala  
 300 165 170 175  
 302 Val Gly Leu Ser Gly Met Asp Gly Arg Leu Leu Thr Ala Arg Pro Ala  
 303 180 185 190  
 305 Pro Lys Ala Ala Asp Leu Gly Tyr Val Gly Glu Val Ala Arg Val Asp  
 306 195 200 205  
 308 Pro Ala Val Leu Arg Ser Leu Ile Asp Thr Ser His Ile Pro Val Val  
 309 210 215 220  
 311 Thr Ser Val Ala Ala Asp Glu Ser Gly Gln Pro Tyr Asn Ile Asn Ala  
 312 225 230 235 240  
 314 Asp Thr Val Ala Gly Glu Leu Ala Ala Ser Leu Gly Ala Glu Lys Leu  
 315 245 250 255  
 317 Ile Leu Leu Thr Asp Val Ala Gly Ile Leu Glu Asp Arg Asn Asp Pro  
 318 260 265 270  
 320 Asp Ser Leu Val Lys Lys Ile Asp Ile Lys Gly Val Lys Lys Met Met  
 321 275 280 285

RAW SEQUENCE LISTING ERROR SUMMARY  
PATENT APPLICATION: US/09/744,100C

DATE: 08/11/2003  
TIME: 12:11:08

Input Set : A:\PTO.AMC.txt  
Output Set: N:\CRF4\08112003\I744100C.raw

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:3; N Pos. 613  
Seq#:4; Xaa Pos. 195  
Seq#:7; N Pos. 492,493,494,495,496,497,498,499,500,501,502,503,504,505,506  
Seq#:7; N Pos. 507,508,509,510,511,512,513,514,515,516,517,518,519,520,521  
Seq#:7; N Pos. 522,523,524,525,526,527,528,529,530,531,532,533,534,535,536  
Seq#:7; N Pos. 537,538,539,540,541,542  
Seq#:8; Xaa Pos. 133,144,145,146,147,148,149,150,151,152,153,154,155,156  
Seq#:8; Xaa Pos. 157,158,159,160  
Seq#:12; Xaa Pos. 2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,24  
Seq#:12; Xaa Pos. 25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43  
Seq#:12; Xaa Pos. 44,45,46,47,48,49,50,51,52,53,54,55,56,57,58,60,61,63,64  
Seq#:12; Xaa Pos. 65,66,67,75,81,83,87,107,118,134,136,137,138,139,140,141  
Seq#:12; Xaa Pos. 144,152,153,156,158,163,168,170,174,175,176,178,179,181  
Seq#:12; Xaa Pos. 182,184,185,186,187,188,191,192,193,196,198,199,200,201  
Seq#:12; Xaa Pos. 203,204,207,209,211,212,213,214,217,218,219,221,222,223  
Seq#:12; Xaa Pos. 228,229,230,232,236,239,247,251,254,255,261,263,267,271  
Seq#:12; Xaa Pos. 274,277,282,283,286,290,292,293,294,296,298,306,310,311  
Seq#:12; Xaa Pos. 317,340